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iMediaCenter/18™

Installation Guide

About iMediaCenter/18

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The **iMediaCenter/18™** is a modular media converter chassis designed to be used in conjunction with all IMC Networks' **iMcV Modules**, including **iMcV-PIM**, **iMcV-LIM**, **iMcV-ATM**, **iMcV-S2MM**, **iMcV-M2MM**, **iMcV-S2SM**, **iMcV-Gigabit**, **iMcV-E1/T1**, **iMcV-LIM 10/100** and **iMcV-FiberWay**. This chassis can also be used in conjunction with IMC Networks' **BandwidthManager**. The **iMediaCenter** Series features an SNMP-management agent embedded directly into the backplane which eliminates the need to purchase, install and configure a separate management module.

- **iMediaCenter/18** is a 3U high, rackmountable chassis that features eighteen slots for installing *iMcV Modules**, one modular 100-240 VAC or -48 VDC Power Module and an additional slot for a second, redundant power supply. (***Note**: Some *iMcV Modules* require two slots for installation. See the *iMcV Module Installation Guide* for details.)
- The **iMediaCenter** Series also includes the **iMediaCenter/2™** and **iMediaCenter/8™**, which are desktop chassis that feature two or eight slots, respectively, for *iMcV Modules* and a fixed 100-240 VAC or a fixed -48 VDC power supply.

Installing iMediaCenter/18

Before installing any application module into the *iMediaCenter/18*, you should first install the *iMediaCenter/18* itself.

INSTALLING A RACKMOUNTABLE IMEDIACENTER/18

To install a rackmountable *iMediaCenter/18*, you will typically need four #10 screws and four clip nuts. (Hardware may vary depending on rack type.) The rest of the hardware is supplied with the unit.

First, mount the RETMA mounting ears to the chassis with the supplied hardware. Then locate a suitable location in the rack for installation and secure the clip-nuts onto the mounting rails. Use the screws to attach the chassis to the rack. Finally, attach the cables between the chassis and each device that will be interconnected, then plug the chassis into a reliable, filtered power source.

When installing the chassis in an equipment rack, be sure to observe the following precautions to prevent electrical or mechanical damage:

- Stay within the chassis power rating to prevent overload of supply circuits or damage to overcurrent protection and supply wiring.
- Maintain reliable earth ground, especially when connecting to a power strip instead of directly to a branch circuit.
- Protect your chassis from exposure to sunlight and electrical or magnetic fields.
- Ensure that the equipment rack remains stable, even with the addition of the chassis and its associated cabling.

INSTALLATION TIP

When testing, IMC Networks recommends you test your module first in an **unmanaged** environment. To do this, disable management (i.e., switch the SNMP lever to the OFF position), follow the unmanaged configuration instructions (see application module manual), then install the unit, connect the cables and test the LEDs. When finished, re-activate management and configure the unit via the software.

INSTALLING A TABLETOP IMEDIACENTER/18

Be sure that the unit is placed on a suitable flat surface, leaving some space at the back of the unit to accommodate the exhaust fans. Attach the cables between the chassis and each device that will be interconnected, then plug the chassis into a reliable, filtered power source.

Power Limitations

Due to the high power demands of *iMcV-LIM 10/100* and *iMcV-Gigabit* you cannot fully populate some *iMediaCenter/18* chassis with these modules. The chart below shows the maximum number of modules each power supply can accomidate.

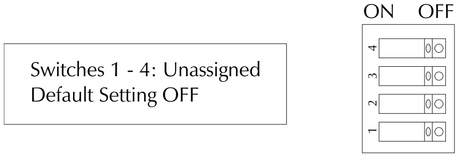
MAXIMUM MODULES FOR IMEDIACENTER/18

MODULE	60W AC/70W DC	100 DC/110W AC
iMcV-LIM 10/100	14	18
iMcV-Gigabit (Double-Wide)	5	6
iMcV-Gigabit (Single-Wide)	10	13

If you wish to use these modules in combinations, please consult the IMC Networks Web site at **www.imcnetworks.com** for more information or contact IMC Networks technical support by phone at (949) 465-3000 or (800) 624-1070 (U.S. and Canada), +32-16-550880 (Europe) via e-mail at **techsupport@imcnetworks.com** for assistance.

Switch Settings

Before installing your modules, you may need to set the switch located inside the chassis, visible through the module slots. The function and settings for these switches are illustrated here.
See specific instructions for use with software options.

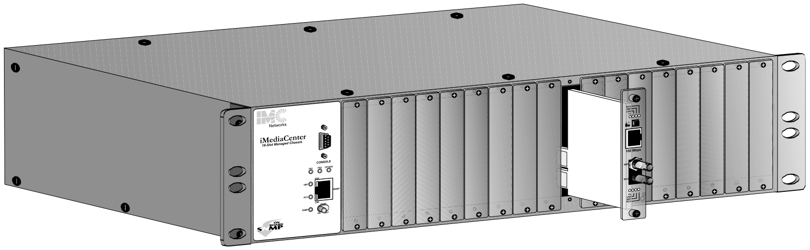


iMediaCenter/18

Configuring and Installing Modules

Refer to the installation guide shipped with the application module(s) for configuration information.

The process for installing a module is simple. If required, remove the blank bracket covering the slot where you'll be installing the module. Slide the module into the chassis, via the cardguides, until the module is seated securely in the connector. Secure the module to the chassis by tightening the captive screws.



Installing an iMcV Module into an iMediaCenter/18 *Chassis*

Connecting a Managed Chassis

An *iMediaCenter/18* chassis that has its management enabled (discussed below) is connected to the LAN via an external 10Base-T hub connection. Connect the chassis to the network by plugging one end of a CAT-5 straight-through twisted pair cable into the port labeled "SNMP" on the *iMediaCenter/18* chassis. Plug the other end of the cable into a device (e.g., switch, hub, etc.) in your existing 10 Mbps Ethernet network. The management port always operates in half-duplex mode.

Configuring iMediaCenter/18

Once connected to the LAN, an *iMediaCenter/18* chassis must have its SNMP agent enabled in order to allow for SNMP management. Do this by moving the switch labeled "SNMP" to the "ON" position. The "SNMP" LED will then glow green, indicating that the SNMP agent has been enabled. Next, the chassis must be assigned IP configuration information (e.g., IP address, subnet mask, etc.). There are three ways to do this:

- ➤ Using DCHP (*Dynamic Configuration Host Protocol*)
- ➤ Using **HUBCTRL32™** over an Ethernet connection
- ➤ Using the unit's serial port

Besides assigning an IP address and subnet mask, the latter two methods will also allow you to create community strings, assign access rights, send traps and more. However, *HUBCTRL32* offers more options than the serial port method (e.g., you can select *which* traps to assign with *HUBCTRL32*).

Once the *iMediaCenter/18* chassis is assigned an IP address, you can use **iView**™ or another SNMP-compatible Network Management System (NMS) to remotely configure, monitor and manage the media conversion modules installed within the unit (see page 8 of this guide for more information).

Management of *iMediaCenter/18* may be disabled by changing the switch labeled "SNMP" to "OFF." The effect of this is that the individual modules will no longer be managed, but the SNMP agent will continue to communicate. As the modules are now unmanaged, all settings for the modules revert to those established by hardware jumpers or switches. Turning management back on will return the modules to management control and any settings previously established via software.

ABOUT DHCP

iMediaCenter/18 has a DHCP client. By default, the DHCP client is enabled. If a DHCP server is present on the network, the DHCP client will initiate a dialogue with the server during the boot up sequence. The server will then issue an IP address to the *iMediaCenter/18*. Once the new IP address is received, *iMediaCenter/18* will reboot so that the new IP address will take effect. See the *About Serial Port Configuration* section for enable/disable information.

If there is no DHCP server on the network, use *HUBCTRL32* or serial configuration to manually set the IP addresses.

ABOUT HUBCTRL32

HUBCTRL32 (Hub Control 32) is an in-band configuration utility created by IMC Networks that lets users quickly and easily complete the first stages of SNMP configuration for IMC Networks SNMP-manageable devices.

Tasks *HUBCTRL32* can perform include:

- ➤ setting the IP address, subnet mask and default gateway
- ➤ defining the community strings and SNMP traps

In addition to the above functions, *HUBCTRL32* offers an authorized IP address system and access restriction to MIB (*Management Information Base*) groups supported by IMC Networks manageable devices. These extra layers of security are purely optional and do not affect SNMP compatibility in any way.

HUBCTRL32 can also be used to upload new versions of the system software and new MIB information. It also offers diagnostic capabilities for faster resolution of technical support issues.

HUBCTRL32 works with the following platforms:

- Windows 98™
- Windows NT™
- Windows 2000™

HUBCTRL32 can be found on the *iView* CD, or you can download it from the IMC Networks Web site (**www.imcnetworks.com/tech/software**). For information regarding the use of *HUBCTRL32*, refer to the *HUBCTRL32* online help file.

ABOUT SERIAL PORT CONFIGURATION

The *iMediaCenter/18* chassis features a serial port that uses an IBM-compatible DB-9 serial connector. To connect *iMediaCenter/18* to your terminal/computer, use a straight-through (pin-to-pin) cable. (If your computer/terminal has a serial port using a connection not compatible with a DB-9 COM port, use the pin connection chart below for reference in making a cable.) Make sure the cable length is under 50 ft. (15.24 m). Plug one end of the cable into the DB-9 connector on the *iMediaCenter/18* chassis, and the other into the appropriate port on your computer/terminal. Set your computer/terminal for VT-100 emulation. The serial port on the computer/terminal should be set for: **38.4K baud**, **8 data bits**, **1 stop bit**, **no parity**, **no flow control.**

DB-9 PIN CONNECTION

Pin #	Function
2	Transmit (OUT)
3	Receive (IN)
5	Ground
1, 4, 6-9	Not used

Main Configuration Screen

After running through an initial self test, the screen will display the following message: "*Press <Enter> for Device Configuration.*"

Press **Enter** to be taken to the main configuration screen. Here you will find several displays:

Saved Values — *displays changes made during current session.*

- IP Address (MUST be assigned during initial configuration)
- Subnet Mask (MUST be assigned during initial configuration)
- Default Gateway

Current Values — *displays values currently in use.*

- IP Address (IP address of SNMP agent)
- Subnet Mask (mask to define IP subnet agent is connected to)
- Default Gateway (default router for IP traffic outside subnet)

Command List

- **I** = Enter New Saved Parameter Values
- **P** = Change Password
- **T** = New Trap Destination
- **K** = Remove ALL Trap Destinations
- **C** = New Community String
- **U** = Delete ALL Community Strings
- **D** = Enable/Disable DHCP Client
- **E** = End Session

NOTE

You must reboot after making any modifications to the Saved Values or your changes will not take effect. To reboot, type the word "**Reboot**" (no quote marks) at the prompt on the main configuration screen, or turn the device's power OFF then ON again.

NOTE

Because the Delete key is not available on VT-100 terminal emulators, use the **F2** key instead.

Assigning TCP/IP Information

To modify the Saved Parameter Values (i.e., assign IP address and subnet mask), press **I**. You will be instructed to enter the IP address and subnet mask for the connected device. Press **Enter** after each. You may also assign a default gateway, if desired (press **Enter** to skip).

When finished, press **Enter**, then type "**Reboot**" for changes to take effect. The Saved Values and Current Values should now both display the changes made (e.g., new IP address and subnet mask).

Creating Community Strings

The default community string is named "public" and has read/write access. IMC Networks recommends you set up two communities: one with read-only access (for general use), the other with read/write access (for the administrator). To create a new community string, go to the main configuration screen and press **C**. Enter the name of the new community (up to 16 characters, no spaces) and press **Enter**. Then type one of the following to assign the community string's access rights:

- **R** = read-only access
- **W** = read/write access
- **Enter** = abort

Press **Enter**.

When finished, press **Enter**, then type “**Reboot**” for changes to take effect. The Saved Values and Current Values should now both display the changes made (e.g., new IP address and subnet mask).

Deleting Community Strings

To delete all community strings and start over, press **U**. You will then be asked, “Are you sure you want to delete all future strings?” Press **Y** to proceed, **N** to abort. Press **Enter**.

Note that the above function will delete ALL community strings. If you want to be able to selectively delete community strings, use *HUBCTRL32* to configure your device.

Assigning Trap Destinations

Traps are sent by the manageable device to a management PC when a certain event takes place.

To enter a trap destination, press **T**. You will then be asked to “Enter a New IP Address.” Type the IP address of the destination device and press **Enter**. Then type the name of the community string (created earlier) and press **Enter**.

Note that the above function enables ALL of the traps the device is capable of. If you want to be able to selectively activate and de-activate traps, use *HUBCTRL32* to configure your device.

Removing Trap Destinations

To remove all trap destinations, press **K**. You will then be asked if you really want to remove all trap destinations. Press **Y** to continue. Press **N** to abort. Press **Enter**.

Password Protection

You can password protect the serial configuration process by pressing **P** from the main configuration screen. You will be asked to enter a password. (***NOTE:*** *Passwords are case sensitive.*) Enter your password (spaces are NOT allowed) and press **Enter**. You will then be asked for your password whenever you log on or off. To remove password protection, select **P** and instead of entering a password, press **Enter**.

Should you forget the password, use *HUBCTRL32* to access the back-up copy of the PROM, then reburn the flash PROM (or contact IMC Networks technical support for assistance).

Enabling/Disabling DHCP

To enable/disable DHCP, press **D**. Type “**Reboot**” for this change to take effect.

Ending Your Session

Be sure to press **E** before disconnecting the cable in order to stop the device from outputting to the serial port.

Using iView for Management

iView is a cross-platform network management application for IMC Networks intelligent networking devices. It features a graphic user interface (GUI) and gives network managers the ability to monitor and control IMC Networks’ products from a variety of platforms. *iView* can also function as a snap-in module for many SNMP-based applications.

SYSTEM REQUIREMENTS

To run *iView for iMediaCenter*, the management PC must be equipped with the following:

- 20 MB free disk space, 32 MB RAM as well as one of the following operating systems:
  - Windows 95/98/NT/2000 (standalone or with HP OpenView™)
  - HP-UX™ and OpenView
  - IBM AIX™ and NetView™ or OpenView
  - Solaris™ and OpenView

NOTE

The HP-UX, IBM AIX, and Solaris versions of *iView* can be downloaded at **http://www.imcnetworks.com/tech/software.htm**.

DISPLAY REQUIREMENTS

iView requires the following display settings:

- Color setting of at least 64K (higher than 256 colors)
- Monitor resolution of at least 800 x 600

INSTALLING AND USING IVIEW

Please consult the *iView* CD for assistance in installing and launching *iView for iMediaCenter*. See the *iView for iMediaCenter* help file for assistance in configuring and managing your IMC Networks media conversion modules.

If Using iView with HP OpenView

During the installation process, *iView* will ask if HP OpenView is installed on the management PC. Click **Yes** to integrate the appropriate files. You can also manually copy the file MC.REG into the appropriate OpenView resource directory on the management PC (usually C:\openview\registration\c).

Once in OpenView, highlight the **iMediaCenter** icon and select **IMC Networks**, **iMediaCenter**; OpenView will then launch *iView*.

If Not Using iView

If you will be using another application for management, you will need to integrate the IMC Networks SNMP vendor files (a.k.a. MIBs) into your application.

The SNMP agent uses the following MIB files, which can be found in the directory root on the CD included with the *iMediaCenter/18*:

MIB-I/MIB-II SNMP statistics, transport protocol orientated statistics (IP, ICMP, UDP, TCP), information collected on frames sent to/from all MAC interfaces inside the agent.

MCIMC.MIB Enterprise-specific information for the agent. For example, configuration information, port type information, link status, etc.

Released versions of all MIBs may be found at **www.imcnetworks.com/tech/software**.

USING MIB COMPILER

The majority of management packages have a function known as a MIB COMPILER. This function reads in the MIB information and converts it to machine-readable format. Refer to your management software's documentation for information on how MIB files are integrated into the software.

USING MIB BROWSER

The information held within the embedded management can be retrieved by using the MIB BROWSER function of the management software.

In addition to integrating the MIB information, you need to ensure that the community strings configured by the SNMP agent are also the ones used by the management software. Failure to do this will result in the inability to SET, or retrieve, MIB variables.

Once the MIB compile is complete and the management software has "discovered" the *iMediaCenter/18* chassis, complete the following steps using the MIB BROWSER to ensure that the MIB files are installed correctly and the *iMediaCenter/18* is responding to the SNMP:

1. From the SYSTEM group of MIB-I/MIB-II, **GET** the variable **sysDescr.0**. This should return the following information:

   "*IMC Networks Corp. iMediaCenter*"

2. From the SYSTEM group of MIB-I/MIB-II, **SET** the variable **sysContact.0** to your name.

3. From the imcInfo group of the IMC Networks MIB (usually held under the node labeled private or enterprise specific), **GET** the variable **imcAddress.0**. This should return the following information: "IMC Networks, 19772 Pauling
   Foothill Ranch, CA 92610-2611"

4. From the iMediaCenter group of the MCIMC.MIB, **GET** the value of the variable **productName.0**. A text value corresponding to the type of IMC Networks chassis in use should appear.

If any of the above fails, please note the error message, the type of management software being used and call IMC Networks technical support at (800) 624-1070 or (949) 465-3000 (U.S. and Canada), +32-16-550880 (Europe) or e-mail **techsupport@imcnetworks.com** for assistance.

CONFIGURING MANAGEMENT USING MIB BROWSER

You can configure media conversion modules managed by the embedded SNMP-management agent using your MIB Browser and changing the values in the MCIMC.MIB. The table below lists all of the read-write MIB objects along with a description of what each does.

MIB DEFINITION CHART

MIB	Definition
unitReset	Reboots unit
mcUnitUnitDescr	Allows user-set description of connection to port
mcModulLinkLoss	Enables (**1**) / disables (**2**) *TP LinkLoss**
mcModulFiberAlert	Enables (**1**) / disables (**2**) *FiberAlert**
mcPortEnable	Enables (**1**) / disables (**2**) port; or enables port with *Auto-Negotiation* (**3**)*
mcPortPortDescr	Allows user-set description of port

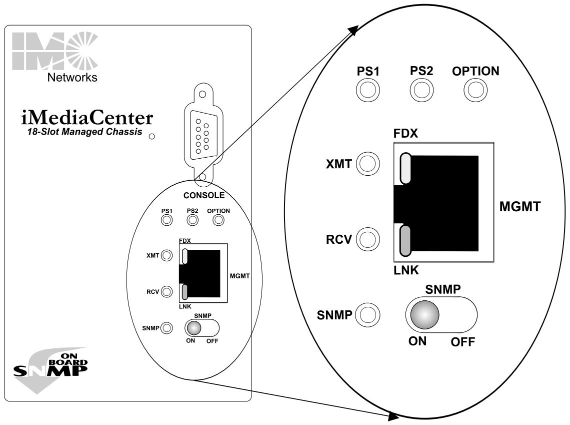
** Indicates feature not available on all media conversion modules*

For MIB objects that are port-specific, add the number of the chassis, the slot number the module is installed in and port number after the MIB object name, using periods to separate the values. For example, to specify the port description for the fiber port on an *iMcV-LIM TX/FX* module installed in the fourth slot of your chassis, input a value for the MIB object **mcPortPortDescr.1.4.2**. In this example, **1** is the chassis number, **4** is the slot number and **2** is the port number.

Contact IMC Networks technical support if you need further assistance in configuring your *iMediaCenter/18* and/or other modules.

LED Indicators

iMediaCenter/18 chassis features several indicator LEDs. They are:



iMediaCenter/18 *Faceplate*

LNK	Glows green when a twisted pair *link* is established. Located on RJ-45 connector.
FDX	Glows yellow when operating in *Full-Duplex* mode. Located on RJ-45 connector.
PS1	Glows green when installed and *Power Supply 1* is operating correctly.
PS2	Glows green when installed and *Power Supply 2* is operating correctly.
RCV	Blinks yellow when unit is *receiving* data.
XMT	Blinks green when unit is *transmitting* data.
MGMT	Glows green when *management* is enabled.
SNMP	Glows green when the *SNMP* switch is in the ON position. SNMP is enabled by this switch.
Option	Reserved for future use.

Reset Button Operation

In the event that your management agent should lock up, a Reset button is present on the management board that is accessible though a hole located near the serial connector. By pressing the Reset button, you will reset the management on the chassis while allowing media conversion to continue. To reset the management, take a slender, non-conductive object, about the width of a paper clip, insert it into the hole in the chassis, and press the Reset button inside. Please observe proper ESD procedures when resetting your management.

Installing Power Modules

iMediaCenter/18 ships with one Power Module power supply installed. It can operate on either AC or DC power, depending upon the Power Module(s) used. A second, redundant Power Module may be installed by removing the blank faceplate covering the second slot on the rear of the unit. Note that AC and DC power supplies can be mixed. It is not, however, recommended that the 60W AC/70W DC and 110W AC/100W DC Power Modules be mixed. If an increased need for power is required, however, the modules can be hot-swapped for each other by following the instructions below:

1) Remove the blank faceplate covering the second slot on the rear of the unit.
2) Insert the 110/100W Power Supply into the second slot.
3) Apply power cord to and turn on the 110/100W Power Supply.
4) Turn off and remove the power cord from the 60/70W Power Supply.
5) Remove the 60/70W Power Supply from the chassis.

***Note**: Do not increase the load of the chassis until the 60W power supply is removed from the iMediaCenter/18.*

IMC NETWORKS TECHNICAL SUPPORT

Tel: (949) 465-3000 or (800) 624-1070 (in the U.S. and Canada); +32-16-550880 (Europe)
Fax: (949) 465-3020
E-Mail: techsupport@imcnetworks.com
Web: www.imcnetworks.com

SPECIFICATIONS

Environmental

Operating Temperature: 32° - 104° F (0° - 40° C)
Storage Temperature: 0° - 160° F (-20° - 70° C)
Humidity: 5 - 95% (non-condensing)

Power

AC Input Load (60W) : 100-240 VAC ±10%, 0.8/0.4A max.
AC Input Load (110W) : 100-240 VAC ±10%, 1.2/0.6A max.
DC Input Load (70W) : -48 VDC, 2.5A max.
DC Input Load (100W) : -48 VDC, 2.5A max.

Chassis Dimensions

4.6” H x 17.4” W x 9.1” D (11.6cm H x 44.3cm W x 23.2cm D)
12.9 lbs (5.9 kg)

Heat Generation

400 BTU/hr. maximum

FIBER OPTIC CLEANING GUIDELINES

Fiber Optic transmitters and receivers are extremely susceptible to contamination by particles of dirt or dust which can obstruct the optic path and cause performance degradation. Good system performance requires clean optics and connector ferrules.

1) Use fiber patch cords (or connectors, if you terminate your own fiber) only from a reputable supplier; low quality components can cause many hard-to-diagnose problems in an installation.
2) Dust caps are are installed at IMC Networks to ensure factory-clean optical devices. These protective caps should not be removed until the moment of connecting the fiber cable to the device. Assure that the fiber is properly terminated, polished and free of any dust or dirt and that the location is as free from dust and dirt as possible.
3) Store spare caps in a dust-free environment such as a sealed plastic bag or box so that when reinstalled they do not introduce any contamination to the optics.
4) Should it be necessary to disconnect the fiber device, reinstall the protective dust caps.
5) If you suspect that the optics have been contaminated, alternate between blasting with clean, dry compressed air and flushing with methanol to remove particles of dirt.

ELECTORSTATIC DISCHARGE PRECAUTIONS

Electrostatic discharge (ESD) can cause damage to your add-in modules. Always observe the following precautions when installing or handling an add-in module or any board assembly.

1) Do not remove unit from its protective packaging until you're ready to install it.
2) Wear an ESD wrist grounding strap before handling any module or component. If you do not have a wrist strap, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.

WARNING! Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service technician and use tools and techniques that conform to accepted industry practices.

3) Hold boards by the edges only; do not touch the electronic components or gold connectors.
4) After removal, always place the boards on a grounded, static free surface, ESD pad or in a proper ESD bag. Do not slide the board over any surface.

DC POWER SUPPLY PRECAUTIONS

The following precautions should be observed when installing chassis with DC power supplies.

1) Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on overcurrent protection and supply wiring.

2) When installing 48V DC rated equipment, it must be installed only per the following conditions:

   A) Connect the equipment to a 48V DC supply source that is electrically isolated form the alternating current source. The 48V DC source is to be connected to a 48V DC SELV source.

   B) Input wiring to terminal block must be routed and secured in such a manner that it is protected from damage and stress. Do not route wiring past sharp edges or moving parts.

   C) A readily accessible disconnect device, with a 3mm minimum contact gap, shall be incorporated in the fixed wiring.
3) Grounding: reliable earthing of this equipment must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than direct connections to the branch circuit.

WARRANTY

IMC Networks warrants to the original end-user purchaser that this product, EXCLUSIVE OF SOFTWARE, shall be free from defects in materials and workmanship under normal and proper use in accordance with IMC Networks' instructions and directions for a period of six (6) years after the original date of purchase. This warranty is subject to the limitations set forth below.

At its option, IMC Networks will repair or replace at no charge the product which proves to be defective within such warranty period. This limited warranty shall not apply if the IMC Networks product has been damaged by unreasonable use, accident, negligence, service or modification by anyone other than an authorized IMC Networks Service Technician or by any other causes unrelated to defective materials or workmanship. Any replaced or repaired products or parts carry a ninety (90) day warranty or the remainder of the initial warranty period, whichever is longer.

To receive in-warranty service, the defective product must be received at IMC Networks no later than the end of the warranty period. The product must be accompanied by proof of purchase, satisfactory to IMC Networks, denoting product serial number and purchase date, a written description of the defect and a Return Merchandise Authorization (RMA) number issued by IMC Networks. No products will be accepted by IMC Networks which do not have an RMA number. For an RMA number, contact IMC Networks at PHONE: (800) 624-1070 (in the U.S and Canada) or (949) 465-3000 or FAX: (949) 465-3020. The end-user shall return the defective product to IMC Networks, freight, customs and handling charges prepaid. End-user agrees to accept all liability for loss of or damages to the returned product during shipment. IMC Networks shall repair or replace the returned product, at its option, and return the repaired or new product to the end-user, freight prepaid, via method to be determined by IMC Networks.

IMC Networks shall not be liable for any costs of procurement of substitute goods, loss of profits, or any incidental, consequential, and/or special damages of any kind resulting from a breach of any applicable express or implied warranty, breach of any obligation arising from breach of warranty, or otherwise with respect to the manufacture and sale of any IMC Networks product, whether or not IMC Networks has been advised of the possibility of such loss or damage.

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Every reasonable effort has been made to ensure that IMC Networks product manuals and promotional materials accurately describe IMC Networks product specifications and capabilities at the time of publication. However, because of ongoing improvements and updating of IMC Networks products, IMC Networks cannot guarantee the accuracy of printed materials after the date of publication and disclaims liability for changes, errors or omissions.

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class A computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his own expense.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

SAFETY CERTIFICATIONS

UL: Listed to UL1950 and CSA 22.2, No. 950, Safety of Information Technology Equipment, Including Electrical Business Equipment.

CE: The products described herein comply with the Council Directive on Electromagnetic Compatibility (89/336/EEC) and the Council Directive on Electrical Equipment Designed for use within Certain Voltage Limits (73/23/EEC). Certified to EN 60950, Safety of Information Technology Equipment, Including Electrical Business Equipment. For further details, contact IMC Networks.

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